STN SEARCH 10/718,265 08/11/2005

FILE 'HOME' ENTERED AT 12:23:52 ON 11 AUG 2005

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)
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FILE 'CAPLUS, BIOSIS, SCISEARCH, USPATFULL, MEDLINE, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIOBASE, LIFESCI' ENTERED AT 12:28:04 ON 11 AUG 2005
L2 153052 S L1
L3 16934 S (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINA
L4 373 S LYASE (S) L3
L5 120 S PLANT# (S) L4
L6 5 S WATERMELON# (S) L5
L7 3 S (EXPRESS? (S) HOST)(S) L5
L8 13 S COLI (S) L5

=> index bioscience medicine
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST 0.21 0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, ...' ENTERED AT 12:24:09 ON 11 AUG 2005

77 FILES IN THE FILE LIST IN STNINDEX

=> s ((hydroperoxide (w) lyase) or HL or HPL)
267 FILE ADISCTI
84 FILE ADISINSIGHT
14 FILE ADISNEWS
539 FILE AGRICOLA
159 FILE ANABSTR
51 FILE ANTE
34 FILE AQUALINE
268 FILE AQUASCI
383 FILE BIOBUSINESS
27 FILE BIOCOMMERCE
414 FILE BIOENG
20518 FILE BIOSIS
1135 FILE BIOTECHABS
1135 FILE BIOTECHDS
5349 FILE BIOTECHNO
3161 FILE CABA
8930 FILE CANCERLIT
29721 FILE CAPLUS
230 FILE CEABA-VTB
1 FILE CEN
294 FILE CIN
544 FILE CONFSCI
3 FILE CROPB
23 FILES SEARCHED...
313 FILE CROPU
2802 FILE DDFB
4123 FILE DDFU
1656 FILE DGENE
724 FILE DISSABS
2802 FILE DRUGB
54 FILE DRUGMONOG2
5134 FILE DRUGU
127 FILE EMBAL
14417 FILE EMBASE
4950 FILE ESBIOBASE
232 FILE FEDRIP
3728 FILE FOMAD
1 FILE FOREGE
188 FILE FROSTI

1903 FILE FSTA
13143 FILE GENBANK
19 FILE HEALSAFE
2143 FILE IFIPAT
17 FILE IMSDRUGNEWS
33 FILE IMSPRODUCT
16 FILE IMSRESEARCH
1508 FILE JICST-EPLUS
12 FILE KOSMET
3295 FILE LIFESCI
16438 FILE MEDLINE
74 FILE NIOSHTIC
364 FILE NTIS
85 FILE OCEAN
10968 FILE PASCAL
55 FILES SEARCHED...
38 FILE PHAR
4 FILE PHARMAML
5 FILE PHIC
307 FILE PHIN
9381 FILE PROMT
789 FILE PROUSDDR
31 FILE RDISCLOSURE
18022 FILE SCISEARCH
3 FILE SYNTHLINE
12481 FILE TOXCENTER
16893 FILE USPATFULL
1515 FILE USPAT2
90 FILE VETB
49 FILE VETU
41 FILE WATER
1463 FILE WPIDS
6 FILE WPIFV
1463 FILE WPINDEX
127 FILE IPA
238 FILE NAPRALERT
2899 FILE NLDB

74 FILES HAVE ONE OR MORE ANSWERS, 77 FILES SEARCHED IN STNINDEX

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)

=> d rank
F1 29721 CAPLUS
F2 20518 BIOSIS
F3 18022 SCISEARCH
F4 16893 USPATFULL
F5 16438 MEDLINE
F6 14417 EMBASE
F7 13143 GENBANK
F8 12481 TOXCENTER
F9 10968 PASCAL
F10 9381 PROMT
F11 8930 CANCERLIT
F12 5349 BIOTECHNO
F13 5134 DRUGU
F14 4950 ESBIOBASE
F15 4123 DDFU
F16 3728 FOMAD
F17 3295 LIFESCI
F18 3161 CABA
F19 2899 NLDB
F20 2802 DDFB
F21 2802 DRUGB
F22 2143 IFIPAT
F23 1903 FSTA
F24 1656 DGENE
F25 1515 USPAT2
F26 1508 JICST-EPLUS
F27 1463 WPIDS

F28 1463 WPINDEX
F29 1135 BIOTECHABS
F30 1135 BIOTECHDS
F31 789 PROUSDDR
F32 724 DISSABS
F33 544 CONFSCI
F34 539 AGRICOLA
F35 414 BIOENG
F36 383 BIOBUSINESS
F37 364 NTIS
F38 313 CROPU
F39 307 PHIN
F40 294 CIN
F41 268 AQUASCI
F42 267 ADISCTI
F43 238 NAPRALERT
F44 232 FEDRIP
F45 230 CEABA-VTB
F46 188 FROSTI
F47 159 ANABSTR
F48 127 EMBAL
F49 127 IPA
F50 90 VETB
F51 85 OCEAN
F52 84 ADISINSIGHT
F53 74 NIOSHTIC
F54 54 DRUGMONOG2
F55 51 ANTE
F56 49 VETU
F57 41 WATER
F58 38 PHAR
F59 34 AQUALINE
F60 33 IMSPRODUCT
F61 31 RDISCLOSURE
F62 27 BIOCOMMERCE
F63 19 HEALSAFE
F64 17 IMSDRUGNEWS
F65 16 IMSRESEARCH
F66 14 ADISNEWS
F67 12 KOSMET
F68 6 WPIFV
F69 5 PHIC
F70 4 PHARMAML
F71 3 CROPB
F72 3 SYNTHLINE
F73 1 CEN
F74 1 FOREGE

=> file f1-f6, f8, f9, f12,, f14, f17

FILE 'CAPLUS' ENTERED AT 12:28:04 ON 11 AUG 2005
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FILE 'BIOSIS' ENTERED AT 12:28:04 ON 11 AUG 2005


FILE 'SCISEARCH' ENTERED AT 12:28:04 ON 11 AUG 2005


FILE 'USPATFULL' ENTERED AT 12:28:04 ON 11 AUG 2005


FILE 'MEDLINE' ENTERED AT 12:28:04 ON 11 AUG 2005

FILE 'EMBASE' ENTERED AT 12:28:04 ON 11 AUG 2005

FILE 'TOXCENTER' ENTERED AT 12:28:04 ON 11 AUG 2005
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FILE 'PASCAL' ENTERED AT 12:28:04 ON 11 AUG 2005


FILE 'BIOTECHNO' ENTERED AT 12:28:04 ON 11 AUG 2005


FILE 'ESBIOBASE' ENTERED AT 12:28:04 ON 11 AUG 2005


FILE 'LIFESCI' ENTERED AT 12:28:04 ON 11 AUG 2005


=> s l1
L2 153052 L1

=> s (gene# or sequence# or clone# or polynucleotide# or recombinant#) (s) l2
3 FILES SEARCHED...
7 FILES SEARCHED...
10 FILES SEARCHED...
L3 16934 (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINANT#
) (S) L2

=> s lyase (s) l3
L4 373 LYASE (S) L3

=> s plant# (s) l4
L5 120 PLANT# (S) L4

=> s watermelon# (s) l5
L6 5 WATERMELON# (S) L5

=> d ibib abs l6 1-5

L6 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:453850 CAPLUS
DOCUMENT NUMBER: 142:480905
TITLE: Recombinant watermelon (Citrullus lanatus) hydroperoxide lyase and use for production of fatty acid aldehydes
INVENTOR(S): Hildebrand, David; Fukushige, Hirotada
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 2005114921 | A1 | 20050526 | US 2003-718265 | 20031121 |

PRIORITY APPLN. INFO.: US 2003-718265 20031121
AB Recombinant watermelon (Citrullus lanatus)hydroperoxide lyase protein, DNA sequences encoding the protein, vectors contg. the DNA sequences and hosts contg. the vectors are provided, together with methods for recombinantly producing watermelon hydroperoxide lyase, DNA sequences, vectors and hosts.

L6 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:147874 CAPLUS
DOCUMENT NUMBER: 142:405219
TITLE: Watermelon (Citrullus lanatus) Hydroperoxide Lyase Greatly Increases C6 Aldehyde Formation in Transgenic Leaves

AUTHOR(S): Fukushige, Hirotada; Hildebrand, David F.
CORPORATE SOURCE: Department of Agronomy, University of Kentucky, Lexington, KY, 40546-0312, USA
SOURCE: Journal of Agricultural and Food Chemistry (2005), 53(6), 2046-2051
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Fatty acid hydroperoxide lyase (HL) is the key enzyme for the prodn. of the "green note" compds., leaf aldehyde [(2E)-hexenal] and leaf alc. [(3Z)-hexenol], in plant tissues. A cDNA encoding HL was cloned from leaves of watermelon (Citrullus lanatus) and expressed in Nicotiana tabacum. The enzyme is 3 times more active with 13-hydroperoxylinolenic acid than with 13-hydroperoxylinoleic acid. The activity against 9-hydroperoxides of polyunsatd. fatty acids is minimal. Enzyme activity of the watermelon HL in the transgenic leaves was .apprx.50 times higher than endogenous HL activity in the wild-type N. tabacum plants. When compared with Arabidopsis HL also expressed in N. tabacum, the highest HL activity is 10 times higher in watermelon HL overexpressing leaves than in Arabidopsis HL overexpressers.
REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2005:133451 USPATFULL
TITLE: Recombinant watermelon (Citrullus lanatus) hydroperoxide lyase and uses thereof
INVENTOR(S): Hildebrand, David, Lexington, KY, UNITED STATES
Fukushige, Hirotada, Lexington, KY, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2005114921 | A1 | 20050526 |
| APPLICATION INFO.: | US 2003-718265 | A1 | 20031121 (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MCDERMOTT, WILL & EMERY, 600 13th Street, N.W., Washington, DC, 20005-3096, US
NUMBER OF CLAIMS: 13
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Page(s)
LINE COUNT: 596
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Recombinant watermelon (Citrullus lanatus)hydroperoxide lyase protein, DNA sequences encoding the protein, vectors containing the DNA sequences and hosts containing the vectors are provided, together with methods for recombinantly producing watermelon hydroperoxide lyase, DNA sequences, vectors and hosts.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 4 OF 5 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2005-0170967 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2005 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Watermelon (Citrullus lanatus) hydroperoxide lyase greatly increases C.sub.6 aldehyde formation in transgenic leaves
AUTHOR: FUKUSHIGE Hirotada; HILDEBRAND David F.
CORPORATE SOURCE: Department of Agronomy, University of Kentucky, 1405 Veterans Drive, Lexington, Kentucky 40546-0312, United States
SOURCE: Journal of agricultural and food chemistry : (Print), (2005), 53(6), 2046-2051, 49 refs.
ISSN: 0021-8561 CODEN: JAFCAU
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States

LANGUAGE: English
AVAILABILITY: INIST-7332, 354000126940230320
AN 2005-0170967 PASCAL
CP Copyright .COPYRGT. 2005 INIST-CNRS. All rights reserved.
AB Fatty acid ***hydroperoxide*** ***lyase*** ( ***HL*** ) is the key enzyme for the production of the "green note" compounds, leaf aldehyde [(2E)-hexenal] and leaf alcohol [(3Z)-hexenol], in ***plant*** tissues. A cDNA encoding ***HL*** was ***cloned*** from leaves of ***watermelon*** (Citrullus lanatus) and expressed in Nicotiana tabacum. The enzyme is 3 times more active with 13-hydroperoxylinolenic acid than with 13-hydroperoxylinoleic acid. The activity against 9-hydroperoxides of polyunsaturated fatty acids is minimal. Enzyme activity of the ***watermelon*** ***HL*** in the transgenic leaves was .eqvsim.50 times higher than endogenous ***HL*** activity in the wild-type N. tabacum ***plants*** . When compared with Arabidopsis ***HL*** also expressed in N. tabacum, the highest ***HL*** activity is 10 times higher in ***watermelon*** ***HL*** overexpressing leaves than in Arabidopsis ***HL*** overexpressers.

L6 ANSWER 5 OF 5 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1996-0004476 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1996 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Glyoxysomal malate dehydrogenase and malate synthase from soybean cotyledons (Glycine max L.) : enzyme association, antibody production and cDNA cloning
AUTHOR: GUEX N.; HENRY H.; FLACH J.; RICHTER H.; WIDMER F.
CORPORATE SOURCE: Inst. plant biology physiology Univ., 1015 Lausanne, Switzerland
SOURCE: Planta, (1995), 197(2), 369-375, refs. 1 p.1/4
ISSN: 0032-0935 CODEN: PLANAB
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Germany, Federal Republic of
LANGUAGE: English
AVAILABILITY: INIST-916, 354000058511430210
AN 1996-0004476 PASCAL
CP Copyright .COPYRGT. 1996 INIST-CNRS. All rights reserved.
AB In order to investigate a possible association between soybean malate synthase (MS ; L-malate glyoxylate- ***lyase*** , CoA-acetylating, EC 4.1.3.2) and glyoxysomal malate dehydrogenase (gMDH ; (S)-malate : NAD.sup.+ oxidoreductase, EC 1.1.1.37), two consecutive enzymes in the glyoxylate cycle, their elution profiles were analyzed on Superdex 200 HR fast protein liquid chromatography columns equilibrated in low- and high-ionic-strength buffers. Starting with soluble proteins extracted from the cotyledons of 5-d-old soybean seedlings and a 45% ammonium sulfate precipitation, MS and gMDH coeluted on Superdex 200 HR (low-ionic-strength buffer) as a complex with an approximate relative molecular mass (M.sub.r) of 670000. Dissociation was achieved in the presence of 50 mM KCl and 5 mM MgCl.sub.2, with the elution of MS as an octamer of M.sub.r 510 000 and of gMDH as a dimer of M.sub.r 73 000. Polyclonal antibodies raised to the native copurified enzymes recognized both denatured MS and gMDH on immunoblots, and their native forms after gel filtration. When these antibodies were used to screen a .lambda. ZAP II expression library containing cDNA from 3-d-old soybean cotyledons, they identified seven ***clones*** encoding gMDH, whereas ten ***clones*** encoding MS were identified using an antibody to SDS-PAGE-purified MS. Of these cDNA ***clones*** a 1.8 kb ***clone*** for MS and a 1.3-kb ***clone*** for gMDH were fully ***sequenced*** . While 88% identity was found between mature soybean gMDH and ***watermelon*** gMDH, the N-terminal transit peptides showed only 37% identity. Despite this low identity, the soybean gMDH transit peptide conserves the consensus R(X.sub.6) ***HL*** motif also found in ***plant*** and mammalian thiolases.

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)
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FILE 'CAPLUS, BIOSIS, SCISEARCH, USPATFULL, MEDLINE, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIOBASE, LIFESCI' ENTERED AT 12:28:04 ON 11 AUG 2005
L2 153052 S L1
L3 16934 S (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINA
L4 373 S LYASE (S) L3
L5 120 S PLANT# (S) L4
L6 5 S WATERMELON# (S) L5

=> s (express? (s) host)(s) l5
9 FILES SEARCHED...
L7 3 (EXPRESS? (S) HOST)(S) L5

=> d ibib abs l7 1-3

L7 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:36652 CAPLUS
DOCUMENT NUMBER: 140:90926
TITLE: Manufacture of conjugated linoleic acid in plants expressing bacterial genes for linoleic acid isomerase
INVENTOR(S): Renz, Andreas; Gipmans, Martijn; Feussner, Ivo; Krueger, Claudia; Hornung, Ellen
PATENT ASSIGNEE(S): BASF Plant Science GmbH, Germany
SOURCE: Ger. Offen., 60 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| DE 10229978 | A1 | 20040115 | DE 2002-10229978 | 20020703 |
| WO 2004005442 | A1 | 20040115 | WO 2003-EP6833 | 20030627 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: DE 2002-10229978 A 20020703
DE 2003-10308850 A 20030227
AB Plants expressing microbial genes for linoleic acid isomerase are described for use in the manuf. of conjugated linoleic acids (trans-11-cis-9-octadecadienoic acid or trans-10-cis-12-octadecadienoic acid) for use in food supplements, e.g. in infant formula. The genes may be modified to improve levels of expression in plants, e.g. by changing the Kozak sequence or by altering codon usage.nces, nucleic acid constructs and/or vectors. In addn. the invention concerns fatty acid mixts. as well as triglycerides with a higher content of conjugated linoleic acid and their use. Cloning of the linoleic acid isomerase gene of Propionibacterium acnes and its expression in Saccharomyces cerevisiae is demonstrated. Yeast expressing the gene showed a clear peak of conjugated linoleic acid upon gas chromatog. after growth on linoleic acid-contg. medium. Content of conjugated linoleic acid was in the range 2-6.4% of total fatty acids.

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:938861 CAPLUS
DOCUMENT NUMBER: 140:1595
TITLE: Transgenic plant expressing Capsicum and Arabidopsis hydroperoxide lyase gene for plant pest resistance
INVENTOR(S): Takabayashi, Junji; Nishioka, Takaaki; Matsui, Kenji; Arimura, Genichiro; Ozawa, Rika; Shiojiri, Kaori
PATENT ASSIGNEE(S): Kyoto University, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2003339260 | A2 | 20031202 | JP 2002-153094 | 20020527 |

PRIORITY APPLN. INFO.: JP 2002-153094 20020527
AB The present invention provides transgenic plant transformed with Capsicum and Arabidopsis hydroperoxide lyase (HPL) gene. The invention also provides cDNA sequences of hydroperoxide lyase Capsicum annuum and Arabidopsis thaliana. The plant expressing sense Capsicum hydroperoxide lyase gene can be used to capture pests by releasing volatile material into air to attract the pests. The plant expressing antisense Arabidopsis hydroperoxide lyase gene can be used for pest resistance by accumulating the pest toxin compd., isothiocyanate.

L7 ANSWER 3 OF 3 USPATFULL on STN
ACCESSION NUMBER: 2004:14299 USPATFULL
TITLE: Hydroperoxyde lyases
INVENTOR(S): McGonigle, Brian, Wilmington, DE, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2004010822 | A1 | 20040115 |
| APPLICATION INFO.: | US 2003-434991 | A1 | 20030509 (10) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 2002-379424P | 20020510 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 2225
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to isolated nucleic acid fragments encoding a hydroperoxide lyases, more specifically soybean (Glycine max) hydroperoxide lyases. The invention also relates to the construction of a recombinant DNA construct encoding all or a portion of a hydroperoxide lyase of the present invention, in sense or antisense orientation, wherein expression of the recombinant DNA construct results in production of altered levels of hydroperoxide lyase in a transformed host cell.

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)

FILE 'CAPLUS, BIOSIS, SCISEARCH, USPATFULL, MEDLINE, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIOBASE, LIFESCI' ENTERED AT 12:28:04 ON 11 AUG 2005
L2 153052 S L1
L3 16934 S (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINA
L4 373 S LYASE (S) L3
L5 120 S PLANT# (S) L4
L6 5 S WATERMELON# (S) L5
L7 3 S (EXPRESS? (S) HOST)(S) L5

=> s coli (s) l5
L8 13 COLI (S) L5

=> d ibib abs l8 1-13

L8 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:466946 CAPLUS
DOCUMENT NUMBER: 133:234386

TITLE: Fatty acid hydroperoxide lyase in tomato fruits: cloning and properties of a recombinant enzyme expressed in Escherichia coli
AUTHOR(S): Matsui, Kenji; Miyahara, Chinatsu; Wilkinson, Jack; Hiatt, Bill; Knauf, Vic; Kajiwara, Tadahiko
CORPORATE SOURCE: Department of Biological Chemistry, Faculty of Agriculture, Yamaguchi University, Yamaguchi, 753-8515, Japan
SOURCE: Bioscience, Biotechnology, and Biochemistry (2000), 64(6), 1189-1196
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Fatty acid hydroperoxide lyase (HPL) is a member of a novel subfamily of cytochrome P 450 and catalyzes a cleavage reaction of fatty acid hydroperoxides to form short-chain aldehydes and oxo-acids. A cDNA encoding tomato fruit HPL (LeHPL) was obtained. An active LeHPL was expressed in E. coli and purified. It showed highest activity against the 13-hydroperoxide of linolenic acid, followed by that of linoleic acid. 9-Hydroperoxides were poor substrates. The absorption spectrum of the purified LeHPL in the native form was similar to that of most P450s although a CO-adduct having a .lambda.max at 450 nm could not be obtained. LeHPL activity is reversibly inhibited by nordihydroguaiaretic acid, while salicylic acid irreversibly inhibited it. LeHPL is kinetically inactivated by fatty acid hydroperoxides, esp. 9-hydroperoxides. The inactivation is prevented by inhibitors of LeHPL. Thus, HPL catalytic activity is thought to be essential to its inactivation. During the inactivation, an abolition of the Soret band was evident, indicating that inactivation is caused mainly by degrdn. of the prosthetic heme in LeHPL.
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:15393 CAPLUS
DOCUMENT NUMBER: 132:74528
TITLE: Fatty acid hydroperoxide lyase, nucleic acid sequences, expression constructs, and transgenic plants with modified traits
INVENTOR(S): Matsui, Kenji
PATENT ASSIGNEE(S): Calgene Llc, USA
SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000000627 | A2 | 20000106 | WO 1999-US14777 | 19990625 |
| WO 2000000627 | A3 | 20000706 | | |
| W: CA, CN, JP, KR, MX, US | | | | |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| CA 2301856 | AA | 20000106 | CA 1999-2301856 | 19990625 |
| EP 1032694 | A2 | 20000906 | EP 1999-930829 | 19990625 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |

PRIORITY APPLN. INFO.: US 1998-90924P P 19980626
US 1999-121965P P 19990226
WO 1999-US14777 W 19990625
AB Polynucleotides and polypeptide sequences for plant hydroperoxide (HPO) lyase, in particular 13-HPO lyase and 9-HPO lyase from Arabidopsis, tomato, and cucumber are presented. Recombinant DNA constructs useful for the expression of a plant HPO lyase in a plant, microbial, or yeast cell are described. Furthermore, DNA constructs useful for the antisense expression of a plant HPO lyase in a plant cell are described. Such constructs will contain a DNA sequence encoding the plant HPO lyase of

interest under the control of regulatory elements capable of preferentially directing the expression of the plant HPO lyase in plant tissue, when such a construct is expressed in a transgenic plant. This invention also relates to methods of using a DNA sequence encoding a plant HPO lyase for the modification of the volatile aldehydes in plant tissues, as well as for methods of increasing disease resistance in a plant.

L8 ANSWER 3 OF 13 USPATFULL on STN
ACCESSION NUMBER: 2005:133451 USPATFULL
TITLE: Recombinant watermelon (Citrullus lanatus) hydroperoxide lyase and uses thereof
INVENTOR(S): Hildebrand, David, Lexington, KY, UNITED STATES
Fukushige, Hirotada, Lexington, KY, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2005114921 | A1 | 20050526 |
| APPLICATION INFO.: | US 2003-718265 | A1 | 20031121 (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MCDERMOTT, WILL & EMERY, 600 13th Street, N.W., Washington, DC, 20005-3096, US
NUMBER OF CLAIMS: 13
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Page(s)
LINE COUNT: 596
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Recombinant watermelon (Citrullus lanatus)hydroperoxide lyase protein, DNA sequences encoding the protein, vectors containing the DNA sequences and hosts containing the vectors are provided, together with methods for recombinantly producing watermelon hydroperoxide lyase, DNA sequences, vectors and hosts.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 4 OF 13 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2000-0353322 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Cytochrome P450-dependent metabolism of oxylipins in tomato. Cloning and expression of allene oxide synthase and fatty acid hydroperoxide lyase
AUTHOR: HOWE G. A.; GYU IN LEE; ITOH A.; LEI LI; DEROCHER A. E.
CORPORATE SOURCE: Department of Energy-Plant Research Laboratory, Michigan State University, East Lansing, Michigan 48824, United States; Department of Biochemistry, Michigan State University, East Lansing, Michigan 48824, United States
SOURCE: Plant physiology : (Bethesda), (2000), 123(2), 711-724, refs. 2 p.1/4
ISSN: 0032-0889 CODEN: PPHYA5
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-3000, 354000088794140300
AN 2000-0353322 PASCAL
CP Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.
AB Allene oxide synthase (AOS) and fatty acid ***hydroperoxide*** ***lyase*** ( ***HPL*** ) are ***plant*** -specific cytochrome P450s that commit fatty acid hydroperoxides to different branches of oxylipin metabolism. Here we report the cloning and characterization of AOS (LeAOS) and ***HPL*** (LeHPL) cDNAs from tomato (Lycopersicon esculentum). Functional expression of the cDNAs in Escherichia ***coli*** showed that LeAOS and LeHPL encode enzymes that metabolize 13- but not 9-hydroperoxide derivatives of C.sub.1.sub.8 fatty acids. LeAOS was active against both 13S-hydroperoxy-9(Z),11(E),15(Z)-octadecatrienoic acid (13-HPOT) and 13S-hydroperoxy-9(Z),11(E)-

octadecadienoic acid, whereas LeHPL showed a strong preference for 13-HPOT. These results suggest a role for LeAOS and LeHPL in the metabolism of 13-HPOT to jasmonic acid and hexenal/traumatin, respectively. LeAOS expression was detected in all organs of the ***plant*** . In contrast, LeHPL expression was predominant in leaves and flowers. Damage inflicted to leaves by chewing insect larvae led to an increase in the local and systemic expression of both ***genes*** , with LeAOS showing the strongest induction. Wound-induced expression of LeAOS also occurred in the def-1 mutant that is deficient in octadecanoid-based signaling of defensive proteinase inhibitor ***genes*** . These results demonstrate that tomato uses genetically distinct signaling pathways for the regulation of different classes of wound responsive ***genes*** .

L8 ANSWER 5 OF 13 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2003:36324579 BIOTECHNO
TITLE: Optimisation of expression and immobilized metal ion affinity chromatographic purification of recombinant (His).sub.6-tagged cytochrome P450 hydroperoxide lyase in Escherichia coli
AUTHOR: Delcarte J.; Fauconnier M.-L.; Jacques P.; Matsui K.; Thonart P.; Marlier M.
CORPORATE SOURCE: J. Delcarte, Agricultural Research Centre, Chaussee de Namur 146, 5030 Gembloux, Belgium.
E-mail: delcarte@cragx.fgov.be
SOURCE: Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, (25 MAR 2003), 786/1-2 (229-236), 15 reference(s)
CODEN: JCBAAI ISSN: 1570-0232
DOCUMENT TYPE: Journal; Conference Article
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2003:36324579 BIOTECHNO
AB Fatty acid ***hydroperoxide*** ***lyase*** ( ***HPL*** ) is a cytochrome P450 acting on fatty acid's hydroperoxides in many ***plants*** . The optimisation of the expression of ***recombinant*** (His).sub.6-tagged ***HPL*** in Escherichia ***coli*** is described: the highest ***HPL*** production yield were obtained with TB medium supplemented with 2.5 mM .delta.-aminolevulinic acid and 0.5 mM IPTG. For the first time, the time course expression of a ***plant*** P450 in a bench-scale fermentor is detailed and the amount of ***recombinant*** ***HPL*** production is 16.3 mg/l. The UV-Visible spectrum of the ***recombinant*** (His).sub.6-tagged ***HPL*** have been recorded after a Ni.sup.2.sup.+-based affinity chromatography (IMAC). 

L8 ANSWER 6 OF 13 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2001:32989319 BIOTECHNO
TITLE: Biogenesis of volatile aldehydes from fatty acid hydroperoxides: Molecular cloning of a hydroperoxide lyase (CYP74C) with specificity for both the 9- and 13-hydroperoxides of linoleic and linolenic acids
AUTHOR: Tijet N.; Schneider C.; Muller B.L.; Brash A.R.
CORPORATE SOURCE: A.R. Brash, Department of Pharmacology, Vanderbilt University Medical School, Nashville, TN 37232, United States.
E-mail: alan.brash@mcmail.vanderbilt.edu
SOURCE: Archives of Biochemistry and Biophysics, (15 FEB 2001), 386/2 (281-289), 36 reference(s)
CODEN: ABBIA4 ISSN: 0003-9861
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2001:32989319 BIOTECHNO
AB A novel member of the ***plant*** cytochrome P450 CYP74 family of fatty acid hydroperoxide metabolizing enzymes has been ***cloned*** from melon fruit (Cucumis melo). The cDNA is comprised of 1446 nucleotides encoding a protein of 481 amino acids. The homology at the

amino acid level to other members of the CYP74 family is 35-50%, the closest relatives being allene oxide synthases. The cDNA was expressed in Escherichia ***coli*** , and the corresponding protein was purified by affinity column chromatography. The native enzyme showed a main Soret band at 418 nm, indicative of a low spin ferric cytochrome P450, and a 447-nm peak appeared in the CO-difference spectrum. Using [U-.sup.1.sup.4C]radiolabeled substrate, HPLC, UV, and GC-MS, the products of conversion of 9S-hydroperoxy-linoleic acid were identified as 9-oxo-nonanic acid and 3Z-non-enal. Kinetic analysis of this ***hydroperoxide*** ***lyase*** showed the highest rate of reaction with 9-hydroperoxy-linolenic acid followed by 9-hydroperoxy-linoleic acid and then the corresponding 13-hydroperoxides. Overall, the newly characterized cytochrome P450 enzyme is a fatty acid ***hydroperoxide*** ***lyase*** with a preference, but not absolute specificity for the 9-positional hydroperoxides of linoleic and linolenic acids. .COPYRGT. 2001 Academic Press.

L8 ANSWER 7 OF 13 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2000:30411156 BIOTECHNO
TITLE: Cytochrome P450-dependent metabolism of oxylipins in tomato. Cloning and expression of allene oxide synthase and fatty acid hydroperoxide lyase
AUTHOR: Howe G.A.; Gyu In Lee; Itoh A.; Li L.; DeRocher A.E.
CORPORATE SOURCE: G.A. Howe, Department of Biochemistry, Michigan State University, East Lansing, MI 48824, United States.
E-mail: howeg@msu.edu
SOURCE: Plant Physiology, (2000), 123/2 (711-724), 71 reference(s)
CODEN: PLPHAY ISSN: 0032-0889
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2000:30411156 BIOTECHNO
AB Allene oxide synthase (AOS) and fatty acid ***hydroperoxide*** ***lyase*** ( ***HPL*** ) are ***plant*** -specific cytochrome P450s that commit fatty acid hydroperoxides to different branches of oxylipin metabolism. Here we report the cloning and characterization of AOS (LeAOS) and ***HPL*** (LeHPL) cDNAs from tomato (Lycopersicon esculentum). Functional expression of the cDNAs in Escherichia ***coli*** showed that LeAOS and LeHPL encode enzymes thai metabolize 13- but not 9-hydroperoxide derivatives of C.sub.1.sub.8 fatty acids. LeAOS was active against both 13S-hydroperoxy-9(Z),11(E),15(Z)-octadecatrienoic acid (13-HPOT) and 13S-hydroperoxy-9(Z),11(E)-octadecadienoic acid, whereas LeHPL showed a strong preference for 13-HPOT. These results suggest a role for LeAOS and LeHPL in the metabolism of 13-HPOT to jasmonic acid and hexenal/traumatin, respectively. LeAOS expression was detected in all organs of the ***plant*** . In contrast, LeHPL expression was predominant in leaves and flowers. Damage inflicted to leaves by chewing insect larvae led to an increase in the local and systemic expression of both ***genes*** , with LeAOS showing the strongest induction. Wound-induced expression of LeAOS also occurred in the def-1 mutant that is deficient in octadecanoid-based signaling of defensive proteinase inhibitor ***genes*** . These results demonstrate that tomato uses genetically distinct signaling pathways for the regulation of different classes of wound responsive ***genes*** .

L8 ANSWER 8 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2004002443 ESBIOBASE
TITLE: Kinetics of Barley FA Hydroperoxide Lyase Are Modulated by Salts and Detergents
AUTHOR: Koeduka T.; Stumpe M.; Matsui K.; Kajiwara T.; Feussner I.
CORPORATE SOURCE: K. Matsui, Department of Biological Chemistry, Faculty of Agriculture, Yamaguchi University, Yoshida 1677-1, Yamaguchi, 753-8515, Japan.
E-mail: matsui@yamaguchi-u.ac.jp
SOURCE: Lipids, (2003), 38/11 (1167-1172), 29 reference(s)

CODEN: LPDSAP ISSN: 0024-4201
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The cDNA from barley coding FA ***hydroperoxide*** ***lyase*** ( ***HPL*** ) was ***cloned*** . A ***recombinant*** protein derived from the cDNA was expressed in Escherichia ***coli*** as an active enzyme. Thus far, there have been no reports on ***HPL*** in monocotyledonous ***plants*** . The ***recombinant*** protein was shown to be most active to linolenic acid 13-hydroperoxide, followed by linoleic acid 13-hydroperoxide. 9-Hydroperoxides of the FA could not be substrates for the ***recombinant*** ***HPL*** . The activity was dramatically enhanced in the presence of a detergent and/or a salt in the reaction mixture. At the same time, the kinetics of the reaction, including inactivation and the V.sub.m.sub.a.sub.x value of the ***HPL*** , were also greatly modulated, depending on the concentration of a monovalent cation and/or a detergent in the reaction mixture. These results suggest that these effectors induced a conformational change in barley ***HPL*** , resulting in an improvement in substrate binding and in enzyme activity.

L8 ANSWER 9 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2003073028 ESBIOBASE
TITLE: Optimisation of expression and immobilized metal ion affinity chromatographic purification of recombinant (His).sub.6-tagged cytochrome P450 hydroperoxide lyase in Escherichia coli
AUTHOR: Delcarte J.; Fauconnier M.-L.; Jacques P.; Matsui K.; Thonart P.; Marlier M.
CORPORATE SOURCE: J. Delcarte, Agricultural Research Centre, Chaussee de Namur 146, 5030 Gembloux, Belgium.
E-mail: delcarte@cragx.fgov.be
SOURCE: Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, (25 MAR 2003), 786/1-2 (229-236), 15 reference(s)
CODEN: JCBAAI ISSN: 1570-0232
DOCUMENT TYPE: Journal; Conference Article
COUNTRY: Netherlands
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Fatty acid ***hydroperoxide*** ***lyase*** ( ***HPL*** ) is a cytochrome P450 acting on fatty acid's hydroperoxides in many ***plants*** . The optimisation of the expression of ***recombinant*** (His).sub.6-tagged ***HPL*** in Escherichia ***coli*** is described: the highest ***HPL*** production yield were obtained with TB medium supplemented with 2.5 mM .delta.-aminolevulinic acid and 0.5 mM IPTG. For the first time, the time course expression of a ***plant*** P450 in a bench-scale fermentor is detailed and the amount of ***recombinant*** ***HPL*** production is 16.3 mg/l. The UV-Visible spectrum of the ***recombinant*** (His).sub.6-tagged ***HPL*** have been recorded after a Ni.sup.2.sup.+-based affinity chromatography (IMAC). 

L8 ANSWER 10 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2001241169 ESBIOBASE
TITLE: Biogenesis of volatile aldehydes from fatty acid hydroperoxides: Molecular cloning of a hydroperoxide lyase (CYP74C) with specificity for both the 9- and 13-hydroperoxides of linoleic and linolenic acids
AUTHOR: Tijet N.; Schneider C.; Muller B.L.; Brash A.R.
CORPORATE SOURCE: A.R. Brash, Department of Pharmacology, Vanderbilt University Medical School, Nashville, TN 37232, United States.
E-mail: alan.brash@mcmail.vanderbilt.edu
SOURCE: Archives of Biochemistry and Biophysics, (15 FEB 2001), 386/2 (281-289), 36 reference(s)
CODEN: ABBIA4 ISSN: 0003-9861

DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AB A novel member of the ***plant*** cytochrome P450 CYP74 family of fatty acid hydroperoxide metabolizing enzymes has been ***cloned*** from melon fruit (Cucumis melo). The cDNA is comprised of 1446 nucleotides encoding a protein of 481 amino acids. The homology at the amino acid level to other members of the CYP74 family is 35-50%, the closest relatives being allene oxide synthases. The cDNA was expressed in Escherichia ***coli*** , and the corresponding protein was purified by affinity column chromatography. The native enzyme showed a main Soret band at 418 nm, indicative of a low spin ferric cytochrome P450, and a 447-nm peak appeared in the CO-difference spectrum. Using [U-.sup.1.sup.4C]radiolabeled substrate, HPLC, UV, and GC-MS, the products of conversion of 9S-hydroperoxy-linoleic acid were identified as 9-oxo-nonanic acid and 3Z-non-enal. Kinetic analysis of this ***hydroperoxide*** ***lyase*** showed the highest rate of reaction with 9-hydroperoxy-linolenic acid followed by 9-hydroperoxy-linoleic acid and then the corresponding 13-hydroperoxides. Overall, the newly characterized cytochrome P450 enzyme is a fatty acid ***hydroperoxide*** ***lyase*** with a preference, but not absolute specificity for the 9-positional hydroperoxides of linoleic and linolenic acids. .COPYRGT. 2001 Academic Press.

L8 ANSWER 11 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2000145683 ESBIOBASE
TITLE: Cytochrome P450-dependent metabolism of oxylipins in tomato. Cloning and expression of allene oxide synthase and fatty acid hydroperoxide lyase
AUTHOR: Howe G.A.; Gyu In Lee; Itoh A.; Li L.; DeRocher A.E.
CORPORATE SOURCE: G.A. Howe, Department of Biochemistry, Michigan State University, East Lansing, MI 48824, United States.
E-mail: howeg@msu.edu
SOURCE: Plant Physiology, (2000), 123/2 (711-724), 71 reference(s)
CODEN: PLPHAY ISSN: 0032-0889
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Allene oxide synthase (AOS) and fatty acid ***hydroperoxide*** ***lyase*** ( ***HPL*** ) are ***plant*** -specific cytochrome P450s that commit fatty acid hydroperoxides to different branches of oxylipin metabolism. Here we report the cloning and characterization of AOS (LeAOS) and ***HPL*** (LeHPL) cDNAs from tomato (Lycopersicon esculentum). Functional expression of the cDNAs in Escherichia ***coli*** showed that LeAOS and LeHPL encode enzymes thai metabolize 13- but not 9-hydroperoxide derivatives of C.sub.1.sub.8 fatty acids. LeAOS was active against both 13S-hydroperoxy-9(Z),11(E),15(Z)-octadecatrienoic acid (13-HPOT) and 13S-hydroperoxy-9(Z),11(E)-octadecadienoic acid, whereas LeHPL showed a strong preference for 13-HPOT. These results suggest a role for LeAOS and LeHPL in the metabolism of 13-HPOT to jasmonic acid and hexenal/traumatin, respectively. LeAOS expression was detected in all organs of the ***plant*** . In contrast, LeHPL expression was predominant in leaves and flowers. Damage inflicted to leaves by chewing insect larvae led to an increase in the local and systemic expression of both ***genes*** , with LeAOS showing the strongest induction. Wound-induced expression of LeAOS also occurred in the def-1 mutant that is deficient in octadecanoid-based signaling of defensive proteinase inhibitor ***genes*** . These results demonstrate that tomato uses genetically distinct signaling pathways for the regulation of different classes of wound responsive ***genes*** .

L8 ANSWER 12 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2000114637 ESBIOBASE
TITLE: Characterization of three cloned and expressed

13-hydroperoxide lyase isoenzymes from alfalfa with unusual N-terminal sequences and different enzyme kinetics

AUTHOR: Noordermeer M.A.; Van Dijken A.J.H.; Smeekens S.C.M.; Veldink G.A.; Vliegenthart J.F.G.

CORPORATE SOURCE: G.A. Veldink, Bijvoet Ctr. for Biomolec. Research, Department of Bio-organic Chemistry, Utrecht University, Padualaan 8, NL-3584 CH Utrecht, Netherlands.
E-mail: veldink@accu.uu.nl

SOURCE: European Journal of Biochemistry, (2000), 267/9 (2473-2482), 43 reference(s)
CODEN: EJBCAI ISSN: 0014-2956

DOCUMENT TYPE: Journal; Article

COUNTRY: United Kingdom

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Three full-length cDNAs from alfalfa seedlings coding for hydroperoxide lyases were ***cloned*** and expressed in Escherichia ***coli*** and characterized as cytochrome P450 enzymes. The isoenzymes were specific for 13-hydroperoxy linoleic and linolenic acids and did not use the 9-hydroperoxy isomers as substrates. Because alfalfa contains botch specificities, this indicates the presence of two different types of hydroperoxide lyases, each specific for one kind of substrate. The enzymes contain 480 amino acids (54 kDa) and contain an unusual, nonplastidic N-terminal ***sequence*** of 22 amino acids, which strongly reduces the enzyme activity. The only known presequence of a ***hydroperoxide*** ***lyase*** (from Arabidopsis thaliana) was considered to be a transit ***sequence*** . The reduced enzyme activity, however, indicates that the hydroperoxide lyases with N-terminal extensions could be pro-enzymes. This hypothesis is supported by the fast release of ***hydroperoxide*** ***lyase*** products by ***plants*** upon wounding. One of the isoenzymes showed a strongly decreased V(max) and K(m) compared to the other two. Because this is probably due to the substitution of Ser377 by Phe; the residue at position 377 seems to be important. This is the first time that sufficient quantities of ***hydroperoxide*** ***lyase*** have been obtained for characterization studies, by circumventing difficult purification procedures and degradation of the enzyme. The high expression level, easy purification, good stability and high specificity make these ***cloned*** hydroperoxide lyases excellent tools to study the reaction mechanism and structure. We postulate an integrated reaction mechanism, based on the known chemistry of cytochrome P450 enzymes. This is the first mechanism that unifies all observed features of hydroperoxide lyases.

L8 ANSWER 13 OF 13 LIFESCI COPYRIGHT 2005 CSA on STN

ACCESSION NUMBER: 2000:97764 LIFESCI

TITLE: Cytochrome P450-Dependent Metabolism of Oxylipins in Tomato. Cloning and Expression of Allene Oxide Synthase and Fatty Acid Hydroperoxide Lyase

AUTHOR: Howe, G.A.; Lee, G.I.; Itoh, A.; Li, L.; DeRocher, A.E.

CORPORATE SOURCE: Department of Energy-Plant Research Laboratory and Department of Biochemistry, Michigan State University, East Lansing, Michigan 48824, USA; E-mail: howeg@msu.edu

SOURCE: Plant Physiology [Plant Physiol.], (20000600) vol. 123, no. 2, pp. 711-724.
ISSN: 0032-0889.

DOCUMENT TYPE: Journal

FILE SEGMENT: G

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Allene oxide synthase (AOS) and fatty acid ***hydroperoxide*** ***lyase*** ( ***HPL*** ) are ***plant*** -specific cytochrome P450s that commit fatty acid hydroperoxides to different branches of oxylipin metabolism. Here we report the cloning and characterization of AOS (LeAOS) and ***HPL*** (LeHPL) cDNAs from tomato (Lycopersicon esculentum). Functional expression of the cDNAs in Escherichia ***coli*** showed that LeAOS and LeHPL encode enzymes that metabolize 13- but not 9-hydroperoxide derivatives of C sub(18) fatty acids. LeAOS

was active against both 13S-hydroperoxy-9(Z),11(E),15(Z)-octadecatrienoic acid (13-HPOT) and 13S-hydroperoxy-9(Z),11(E)-octadecadienoic acid, whereas LeHPL showed a strong preference for 13-HPOT. These results suggest a role for LeAOS and LeHPL in the metabolism of 13-HPOT to jasmonic acid and hexenal/traumatin, respectively. LeAOS expression was detected in all organs of the ***plant*** . In contrast, LeHPL expression was predominant in leaves and flowers. Damage inflicted to leaves by chewing insect larvae led to an increase in the local and systemic expression of both ***genes*** , with LeAOS showing the strongest induction. Wound-induced expression of LeAOS also occurred in the def-1 mutant that is deficient in octadecanoid-based signaling of defensive proteinase inhibitor ***genes*** . These results demonstrate that tomato uses genetically distinct signaling pathways for the regulation of different classes of wound responsive ***genes*** .

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)
FILE 'CAPLUS, BIOSIS, SCISEARCH, USPATFULL, MEDLINE, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIOBASE, LIFESCI' ENTERED AT 12:28:04 ON 11 AUG 2005
L2 153052 S L1
L3 16934 S (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINA
L4 373 S LYASE (S) L3
L5 120 S PLANT# (S) L4
L6 5 S WATERMELON# (S) L5
L7 3 S (EXPRESS? (S) HOST)(S) L5
L8 13 S COLI (S) L5

=> log y

STN INTERNATIONAL LOGOFF AT 12:36:48 ON 11 AUG 2005